(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
6 October 2005 (06.10.2005)

PCT

(10) International Publication Number
WO 2005/093801 A1

(51) International Patent Classification: H01L 21/268, 21/20, 21/336, 29/786

(21) International Application Number: PCT/JP2005/006207

(22) International Filing Date: 24 March 2005 (24.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
2004-092933 26 March 2004 (26.03.2004) JP

(71) Applicant *(for all designated States except US)*: SEMICONDUCTOR ENERGY LABORATORY CO., LTD. [JP/JP]; 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

(72) Inventors; and
(75) Inventors/Applicants *(for US only)*: TANAKA, Koichiro [JP/JP]; c/o SEMICONDUCTOR ENERGY LABORATORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP). YAMAMOTO, Yoshiaki [JP/JP]; c/o SEMICONDUCTOR ENERGY LABORATORY CO., LTD., 398, Hase, Atsugi-shi, Kanagawa, 2430036 (JP).

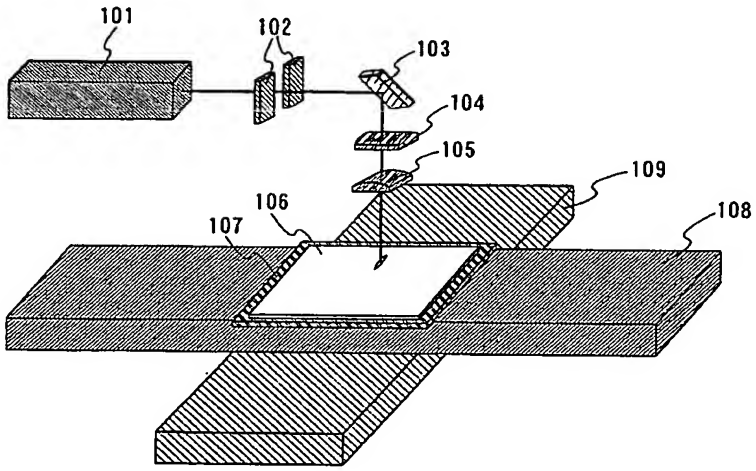
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LASER IRRADIATION METHOD AND LASER IRRADIATION APPARATUS



(57) Abstract: An object of the present invention is to provide a laser irradiation method and a laser irradiation apparatus for irradiating an irradiation surface with a linear beam having more homogeneous intensity by blocking a low-intensity part of the linear beam without forming the fringes due to the diffraction on the irradiation surface. In the laser irradiation, a laser beam emitted from a laser oscillator 101 passes through a slit 102 so as to block a low-intensity part of the laser beam, the traveling direction of the laser beam is bent by a mirror 103, and an image formed at the slit is projected to an irradiation surface 106 by a convex cylindrical lens 104.

WO 2005/093801 A1